## **<u>Cerificate of Calibration</u>**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	6-Apr-20
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibr	ration Record	6-Jun-20
Model No.:	LD-5R				
Serial No.:	972778				
Equipment No.:	SA-01-07	Sensitivity	0.001 mg/m3	_	
High Volume Sa	ampler No.: A-01-01A	Before Sensiti	vity Adjustment	735 CPM	
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ty Adjustment	735 CPM	
	Ca	libration of 1 h	r TSP		
Calibration	Laser Dust Monitor	ſ		HVS	
Point	Mass Concentration (µg/ X-axis	m3)	Mas	ss concentration (µ <b>Y-axis</b>	g/m <sup>3</sup> )
1	44.0			84.5	
2	34.0		81.0		
3	25.0			76.8	
Average	34.3			80.8	
By Linear Reg	ression of Y on X	_			
Slope, mw =	0.4042	Intero	cept, bw =	66.8876	
Correlation co	<b>Defficient* = 0.9966</b>				
	Se	t Correlation F	actor		
Particaulate Con	icentration by High Volume Sampler (	$(\mu g/m^3)$		80.8	
Particaulate Con	acentration by Dust Meter ( $\mu g/m^3$ )			34.3	
Measureing time	e, (min)			60.0	
Set Correlation 1	Factor, SCF				
SCF = [K=Hig	h Volume Sampler / Dust Meter, (μ	g/m3) ]	2.4		
				_	

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

## **<u>Cerificate of Calibration</u>**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	5-Jun-20
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibi	ration Record	5-Aug-20
Model No.:	LD-5R				
Serial No.:	972778				
Equipment No.:	SA-01-07	Sensitivity	0.001 mg/m3	_	
High Volume Sa	ampler No.: <u>A-01-01A</u>	Before Sensiti	vity Adjustment	735 CPM	
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ty Adjustment	735 CPM	
	Ca	libration of 1 h	r TSP		
Calibration	Laser Dust Monitor	ſ		HVS	
Point	Mass Concentration (µg/	(m3)	Mas	ss concentration (µ	ug/m <sup>3</sup> )
	X-axis			Y-axis	
1	47.0		100.5		
2	37.0			96.5	
3	26.0			91.0	
Average	36.7			96.0	
By Linear Reg	ression of Y on X				
Slope, mw =	0.4532	Intero	cept, bw =	79.3837	
Correlation co	<b>Defficient</b> * = 0.9980				
	Sa	t Correlation F	actor		
Particaulate Con	centration by High Volume Sampler (	$(\mu g/m^3)$		96.0	
Particaulate Con	centration by Dust Meter ( $\mu g/m^3$ )	(1.8)		36.7	
Measureing time	e. (min)			60.0	
Set Correlation	Factor . SCF				
SCF = [K=Hig	h Volume Sampler / Dust Meter, (μ	g/m3) ]	2.6		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Approved by: <u>leng</u> Kang Henry Leung

## **<u>Cerificate of Calibration</u>**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	6-Apr-20
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibi	ration Record	6-Jun-20
Model No.:	LD-5R				
Serial No.:	972779				
Equipment No.:	SA-01-08	Sensitivity	0.001 mg/m3		
High Volume Sa	ampler No.: A-01-01A	Before Sensiti	vity Adjustment	744 CPM	
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ity Adjustment	744 CPM	
	Ca	libration of 1 h	r TSP		
Calibration	Laser Dust Monitor			HVS	
Point	Mass Concentration (µg/	m3)	Mas	ss concentration (µ	g/m <sup>3</sup> )
	X-axis			Y-axis	
1	45.0		84.5		
2	32.0			81.0	
3	18.0			76.8	
Average	31.7			80.8	
By Linear Reg	ression of Y on X				
Slope, mw =	0.2854	Intere	cept, bw =	71.7298	
Correlation co	oefficient* = 0.9995				
	0				
Deutie eulete Cou	Se	t Correlation F	actor	00.0	
Particaulate Con	icentration by High Volume Sampler (	μg/m )		80.8	
Particaulate Con	icentration by Dust Meter (µg/m)			31.7	
Measureing time	e, (min)			60.0	
Set Correlation	Factor, SCF				
SCF = [K=Hig]	h Volume Sampler / Dust Meter, (μ	g/m3) ]	2.6		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Approved by: <u>leng</u> Kang Henry Leung

Calibrated by: \_\_\_\_\_\_\_\_\_ Wong Shing Kwai

## **<u>Cerificate of Calibration</u>**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	5-Jun-20
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibi	ration Record	5-Aug-20
Model No.:	LD-5R				
Serial No.:	972779				
Equipment No.:	SA-01-08	Sensitivity	0.001 mg/m3	_	
High Volume Sa	ampler No.: A-01-01A	Before Sensiti	vity Adjustment	744 CPM	
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ty Adjustment	744 CPM	
	Ca	libration of 1 h	r TSP		
Calibration	Laser Dust Monitor	ſ		HVS	
Point	Mass Concentration (µg/	(m3)	Mas	ss concentration (µ	$g/m^3$ )
	X-axis			Y-axis	
1	46.0		100.5		
2	33.0			96.5	
3	19.0			91.0	
Average	32.7			96.0	
By Linear Regi	ression of Y on X			0.4.4000	
Slope, mw =	0.3524	Intero	cept, bw =	84.4890	
Correlation co	oefficient* = 0.9976				
	Se	t Correlation F	actor		
Particaulate Con	centration by High Volume Sampler (	$(\mu g/m^3)$		96.0	
Particaulate Con	acentration by Dust Meter ( $\mu g/m^3$ )			32.7	
Measureing time	e, (min)			60.0	
Set Correlation	Factor, SCF				
SCF = [K=Hig	h Volume Sampler / Dust Meter, (μ	g/m3) ]	2.9		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Wong Shing Kwai

## **<u>Cerificate of Calibration</u>**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	6-Apr-20
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calib	ration Record	6-Jun-20
Model No.:	LD-5R				
Serial No.:	972780				
Equipment No.:	SA-01-09	Sensitivity	0.001 mg/m3	_	
High Volume Sa	ampler No.: <u>A-01-01A</u>	Before Sensiti	vity Adjustment	739 CPM	
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ty Adjustment	739 CPM	
	Ca	libration of 1 h	r TSP		
Calibration	Laser Dust Monitor	<b>1</b>		HVS	
Point	Mass Concentration (µg/ X-axis	m3)	Mass concentration (µg/m <sup>3</sup> ) <b>Y-axis</b>		
1	44.0		84.5		
2	38.0			81.0	
3	29.0			76.8	
Average	37.0			80.8	
By Linear Regr	cession of Y on X				
Slope, mw =	0.5096	Intero	cept, bw =	61.9096	
Correlation co	<b>Defficient* = 0.9980</b>				
	Se	t Correlation F	actor		
Particaulate Concentration by High Volume Sampler (µg/m <sup>3</sup> )				80.8	
Particaulate Con	icentration by Dust Meter (µg/m <sup>-</sup> )			37.0	
Measureing time	e, (min)			60.0	
Set Correlation	Factor, SCF	( <b>A</b> ) ]			
SCF =   K=Hig	h Volume Sampler / Dust Meter, (μ	g/m3)	2.2		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: Wong Shing Kwai

## **<u>Cerificate of Calibration</u>**

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler

Description:	Digital Dust Indicator		Date	of Calibration	5-Jun-20	
Manufacturer:	Sibata Scientific Technology LTD.	_	Validity of Calibi	ration Record	5-Aug-20	
Model No.:	LD-5R					
Serial No.:	972780					
Equipment No.:	SA-01-09	Sensitivity	0.001 mg/m3	_		
High Volume Sa	ampler No.: A-01-01A	Before Sensiti	vity Adjustment	739 CPM		
Tisch Calibratio	n Orifice No.: <u>3607</u>	After Sensitivi	ity Adjustment	739 CPM		
	Ca	libration of 1 h	r TSP			
Calibration	Laser Dust Monitor	•		HVS		
Point	Mass Concentration (µg/	m3)	Mas	ss concentration (µ	g/m <sup>3</sup> )	
	A-axis			Y-axis		
1	45.0		100.5			
2	39.0		96.5			
3	30.0			91.0		
Average	38.0			96.0		
	• • • • •					
By Linear Regi	ression of Y on X					
Slope, mw =	0.6316	Intero	cept, bw =	72.0000		
Correlation co	oefficient* = 0.9997					
	Se	t Correlation F	actor			
Particaulate Con	centration by High Volume Sampler (	$(\mu g/m^3)$		96.0		
Particaulate Con	centration by Dust Meter ( $\mu g/m^3$ )			38.0		
Measureing time	e, (min)			60.0		
Set Correlation	Factor, SCF					
SCF = [K=Hig	h Volume Sampler / Dust Meter, (µ	g/m3) ]	2.5			

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (Wellab Litimed)

Calibrated by: \_\_\_\_\_\_\_. Wong Shing Kwai



#### File No. MA16034/05/0023

Project No.	AM1 - Tin Hau	1 Temple				
Date:	9-A	Apr-20	Next Due Date:	9-Jun-20	Operator:	SK
Equipment No.:	A-	01-05	Model No.:	GS2310	Serial No.	10599
			Ambient Condit	ion		
Temperatu	ıre, Ta (K)	294.6	Pressure, Pa (mmI	Ig)	762.9	

Orifice Transfer Standard Information							
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740		
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date: 17-Jan-21 $Qstd = \{ [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$							

	Calibration of TSP Sampler						
Calibration		Orfice			HVS		
Point	ΔH (orifice), in. of water	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	[ΔW x (Pa	/760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b>	
1	12.6	3.58	60.88	8.8		2.99	
2	9.3	3.07	52.37	6.3		2.53	
3	7.5	2.76	47.08	4.9		2.23	
4	4.7	2.18	37.36	3.2		1.80	
5	2.5	1.59	27.38	1.8		1.35	
By Linear Regression of Y on X Slope , mw =							
Correlation	coefficient* =	0.9985	_				
*If Correlation C	Coefficient < 0.990	), check and recalibrate.					
		Set Point C	alculation				
From the TSP Fi	eld Calibration Cu	urve, take Qstd = 43 CFM					
From the Regres	sion Equation, the	e "Y" value according to					
Therefore, Se	$mw \ x \ Qstd + bw = [\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$ Therefore, Set Point; W = (mw x Qstd + bw) <sup>2</sup> x (760 / Pa) x (Ta / 298) =						
Remarks:							
Conducted by:	SK Wong	Signature:	.2'		Date:	09 April 2020	
Checked by:	Henry Leung	Signature:	Xoy		Date:	09 April 2020	

Temperature, Ta (K)



#### File No. MA16034/08/0023

Project No.	AM2 - Sai Tso	Wan Recreation	n Ground				
Date:	9-A	Apr-20	Next Due Date:	9-Jun-20	Operator:	SK	
Equipment No.:	A-	01-08	Model No.:	GS2310	Serial No.	1287	
			Ambient Condit	ion			
Temperatu	ıre, Ta (K)	294.6	Pressure, Pa (mmI	Hg)	762.9		

Pressure, Pa (mmHg)

Orifice Transfer Standard Information							
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740		
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date:	17-Jan-21		Qstd = {[∆H x	(Pa/760) x (298/Ta)] <sup>1/2</sup> -bc} /	mc		

		Calibration of	TSP Sampler			
Calibration		Orfice			HVS	
Point	$\Delta H$ (orifice), in. of water	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	[ΔW x (l	Pa/760) x (298/Ta)] <sup>1/2</sup> Y-axis
1	12.7	3.59	61.12	8.4		2.92
2	9.7	3.14	53.48	6.0		2.47
3	7.8	2.81	48.00	4.8		2.21
4	4.7	2.18	37.36	3.1		1.77
5	2.6	1.62	27.91	1.8		1.35
Correlation	coefficient* =	<b>0.9973</b> 0, check and recalibrate.	-	0.041	3	
		Set Point C	alculation			
From the TSP Fi	ield Calibration C	urve, take Qstd = 43 CFM				
From the Regres	est Point: $W = (mx)$	mw x Qstd + bw = $[\Delta W$ x w x Qstd + bw ) <sup>2</sup> x (760 / Pa) x (	x (Pa/760) x (29)	98/Ta)] <sup>1/2</sup>		
Remarks:						
Conducted by:	SK Wong	Signature:	×.		Date:	09 April 2020

Τ

1

Temperature, Ta (K)



#### File No. MA16034/03/0023

Project No.	AM3 - Yau La	i Estate, Bik Lai	House					
Date:	9-4	Apr-20	Next Due Date:	9-Jun-20	Operator:	SK		
Equipment No.:	A-	01-03	Model No.:	GS2310	Serial No.	10379		
			Ambient Condit	ion				
Temperatu	ıre, Ta (K)	294.6	Pressure, Pa (mml	Hg)	762.9			

Pressure, Pa (mmHg)

Orifice Transfer Standard Information							
Serial No. 3746 Slope, mc 0.0592 Intercept, bc -0.02740							
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date:	Next Calibration Date: 17-Jan-21 $Qstd = \{[\Delta H \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2} - bc\} / mc$						

	Calibration of TSP Sampler							
Calibration		Orfice			HVS			
Point	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] <sup>1/2</sup>	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$\frac{[\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}}{Y-axis}$			
1	12.6	3.58	60.88	8.5	2.94			
2	9.3	3.07	52.37	6.5	2.57			
3	7.8	2.81	48.00	5.2	2.30			
4	5.0	2.25	38.52	3.5	1.89			
5	2.6	1.62	27.91	2.1	1.46			
By Linear Regression of Y on X Slope , mw =0.0453 Intercept, bw :0.1692 Correlation coefficient* =0.9983 *If Correlation Coefficient < 0.990, check and recalibrate.								
		Set Point C	alculation					
From the TSP Fi	eld Calibration C	urve, take Qstd = 43 CFM						
From the Regres	sion Equation, the et Point; W = ( mv	w x Qstd + bw = $[\Delta W x$ w x Qstd + bw ) <sup>2</sup> x (760 / Pa) x (	x <b>(Pa/760) x (2</b> 9 Ta / 298 ) =	98/Ta)] <sup>1/2</sup> 4.41				
Remarks:								
Conducted by:	SK Wong	Signature:	<u>, '</u>		Date: 09 April 2020			
Checked by:	Henry Leung	Signature:	X27		Date: 09 April 2020			

F:\Cinotech Solutions\Equipment\Calibration Cert\HVS\new\MA16034\_20200409\_AM3\_(A-01-03).xls



File No. MA16034/54/0023

Project No.	AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office							
Date:	9-A	pr-20	Next Due Date:	9-Jun-	20 Operator:	SK		
Equipment No.:	A-	01-54	Model No.:	TE-51	70 Serial No.	1536		
	Ambient Condition							
Temperatu	re, Ta (K)	294.6	Pressure, Pa (mmF	Ig)	762.9			

Orifice Transfer Standard Information							
Serial No. 3746 Slope, mc 0.0592 Intercept, bc -0.02740							
Last Calibration Date:	17-Jan-20	) mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date: 17-Jan-21 $Qstd = \{ [\Delta H \ x \ (Pa/760) \ x \ (298/Ta) ]^{1/2} - bc \} / mc$							

	Calibration of TSP Sampler								
Calibration		Orfice			HVS				
Point	ΔH (orifice), in. of water	$[\Delta H \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	[ΔW x (Pa	/760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b>			
1	12.8	3.61	61.36	8.6		2.96			
2	9.8	3.15	53.75	6.3		2.53			
3	7.4	2.74	46.77	5.1		2.28			
4	5.2	2.30	39.28	3.3		1.83			
5	2.8	1.69	28.95	1.9		1.39			
By Linear Regression of Y on X Slope , mw =0.0482 Intercept, bw :0.0245 Correlation coefficient* =0.9981 *If Correlation Coefficient < 0.990, check and recalibrate.									
From the TSP Fi	eld Calibration Cu	<b>Set Point C</b> urve, take Ostd = 43 CFM	alculation						
From the Regres	sion Equation the	"Y" value according to							
Therefore, Se	et Point; W = ( mv	$\mathbf{mw} \mathbf{x} \mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \mathbf{x}]$ $\mathbf{w} \mathbf{x} \mathbf{Qstd} + \mathbf{bw}^{2} \mathbf{x} (760 / Pa) \mathbf{x} (760 / Pa) \mathbf{x} (760 / Pa)$	x (Pa/760) x (29 Ta / 298 ) =	98/Ta)] <sup>1/2</sup> 4.14		-			
Remarks:									
Conducted by:	SK Wong	Signature:			Date:	09 April 2020			
Checked by:	Henry Leung	Signature:	Xay		Date:	09 April 2020			

F:\Cinotech Solutions\Equipment\Calibration Cert\HVS\new\MA16034\_20200409\_AM4(A)\_(A-01-54).xls



#### File No. MA16034/05/0024

Project No.	AM1 - Tin Ha	u Temple				
Date:	9-J	un-20	Next Due Date:	9-Aug-20	Operator:	SK
Equipment No.:	A-	01-05	Model No.:	GS2310	Serial No.	10599
			Ambient Condit	ion		
Temperatu	re, Ta (K)	303	Pressure, Pa (mml	Hg)	759.1	

Orifice Transfer Standard Information							
Serial No.         3746         Slope, mc         0.0592         Intercept, bc         -0.02740							
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date: 17-Jan-21 $Qstd = \{[\Delta H \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2} - bc\} / mc$							

		Calibration of	TSP Sampler				
C-111-metion		Orfice	<b>i</b>		HVS		
Point	$\Delta H$ (orifice), in. of water	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	[ΔW x (Pa	/760) x (298/Ta)] <sup>1/2</sup> Y-axis	
1	12.8	3.55	60.36	8.6		2.91	
2	9.4	3.04	51.79	6.3		2.49	
3	7.5	2.71	46.31	4.8		2.17	
4	4.8	2.17	37.14	3.1		1.75	
5	2.5	1.57	26.93	1.8		1.33	
Slope , mw =0.0475       Intercept, bw =0.0119         Correlation coefficient* =0.9983          *If Correlation Coefficient < 0.990, check and recalibrate.							
		Set Point C	alculation				
From the TSP Fi	eld Calibration C	Surve, take $Qstd = 43 CFM$					
From the Regres	sion Equation, th	e "Y" value according to					
Therefore, Se	et Point; W = ( my	$\mathbf{mw} \mathbf{x} \mathbf{Qstd} + \mathbf{bw} = [\Delta \mathbf{W} \mathbf{x}]$ w x Qstd + bw ) <sup>2</sup> x ( 760 / Pa ) x (	x <b>(Pa/760) x (29</b> Ta / 298 ) =	98/Ta)] <sup>1/2</sup> 4.30		-	
Remarks:							
Conducted by:	SK Wong	Signature:		-	Date:	9 June 2020	
Checked by: F:\Cinotech Solution	Henry Leung	Signature: Cert\HVS\new\MA16034 20200609 AM (A	-01-05).xls		Date:	9 June 2020	



#### File No. MA16034/08/0024

Project No.	AM2 - Sai Tso Wan Recreation Ground						
Date:	9-J	un-20	Next Due Date:	9-Aug-2	20 Operator:	SK	
Equipment No.:	A-	01-08	Model No.:	GS231	0 Serial No.	1287	
			Ambient Condit	ion			
Temperatu	re, Ta (K)	303	Pressure, Pa (mml	Hg)	759.1		

Orifice Transfer Standard Information							
Serial No.         3746         Slope, mc         0.0592         Intercept, bc         -0.02740							
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date: $17$ -Jan-21 Qstd = {[ $\Delta H \times (Pa/760) \times (298/Ta)$ ] <sup>1/2</sup> -bc} / mc							

		Calibration of	TSP Sampler						
Calibration		Orfice	1		HVS	1/2			
Point	$\Delta H$ (orifice),	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$	Qstd (CFM)	$\Delta W$ (HVS), in.	$[\Delta W \times (Pa)]$	(760) x (298/Ta)] <sup>1/2</sup>			
1		2.55		of water					
1	12.8	3.55	60.36	8.4		2.87			
2	9.8	3.10	52.87	6.1		2.45			
3	7.8	2.77	47.22	4.8		2.17			
4	4.8	2.17	37.14	3.0		1.72			
5	2.6	1.60	27.46	1.9		1.37			
By Linear Regression of Y on X Slope mw = 0.0456 Intercent bw : 0.0631									
Correlation	coefficient* =	0 9964			-				
*If Correlation (	Coefficient < 0.99	0 check and recalibrate	_						
		o, encer and recanorate.							
		Set Point C	alculation						
From the TSP Fi	ield Calibration C	Curve, take Qstd = 43 CFM							
From the Regres	sion Equation, th	e "Y" value according to							
C C	1	C							
		$\mathbf{m}\mathbf{w} \mathbf{x} \mathbf{Q}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w} = [\Delta \mathbf{W}]$	x (Pa/760) x (29	98/Ta)] <sup>1/2</sup>					
	( D . ( W) (	$(2 + 1 + 1)^2$ (7(0 / <b>P</b> )) (	T (200)	4.17					
I neretore, Se	et Point; $w = (m)$	$W \times Qstd + bW ) \times (7007 Pa) \times ($	1a / 298 =	4.1/					
Remarks:									
Conducted by:	SK Wong	Signature:			Date	9 June 2020			
Conducted by.	Six trong		,	-	Dute.				
Checked by:	Henry Leung	Signature:	Xon		Date:	9 June 2020			

F:\Cinotech Solutions\Equipment\Calibration Cert\HVS\new\MA16034\_20200609\_AM2\_(A-01-08).xls



#### File No. MA16034/03/0024

Project No.	AM3 - Yau La							
Date:	9-J	Jun-20	Next Due Date:	9-Aug	g-20 Operator:	SK		
Equipment No.:	A-	A-01-03 Model N		GS23	S10 Serial No.	10379		
Ambient Condition								
Temperatu	re, Ta (K)	303	Pressure, Pa (mml	Hg)	759.1			

Orifice Transfer Standard Information							
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740		
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$					
Next Calibration Date:	17-Jan-21	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc					

		Calibration of	TSP Sampler			
G 11		Orfice	151 Sampler		HVS	
Point	ΔH (orifice), in. of water	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	[ΔW x (Pa/	760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b>
1	12.8	3.55	60.36	8.5		2.89
2	9.3	3.02	51.52	6.5		2.53
3	7.8	2.77	47.22	5.1		2.24
4	5.2	2.26	38.64	3.4		1.83
5	2.6	1.60	27.46	2.0		1.40
Slope , mw = Correlation	0.0462 coefficient* =	0.9969	Intercept, bw = _	0.095	3	
*If Correlation (	Coefficient < 0.99	0, check and recalibrate.				
		Set Point C	alculation			
From the TSP F	ield Calibration C	urve, take Qstd = 43 CFM				
From the Regres	sion Equation, th	e "Y" value according to				
		$\mathbf{m}\mathbf{w} \times \mathbf{Q}\mathbf{s}\mathbf{t}\mathbf{d} + \mathbf{b}\mathbf{w} = [\Delta \mathbf{W} \times \mathbf{w}]$	x (Pa/760) x (29	98/Ta)] <sup>1/2</sup>		
Therefore, Se	et Point; W = ( my	$(x + bw)^2 x (760 / Pa) x ($	Ta / 298 ) =	4.41		
Domoniza						
ixemarks.						
Conducted by:	SK Wong	Signature:			Date:	9 June 2020
Checked by:	Henry Leung	Signature:	Xay		Date:	9 June 2020

F:\Cinotech Solutions\Equipment\Calibration Cert\HVS\new\MA16034\_20200609\_AM3\_(A-01-03).xls



#### File No. MA16034/54/0024

Project No.	AM4(A) - Cha	Kwo Ling Publi						
Date:	9-J	un-20	Next Due Date:	9-Aug-20	Operator:	SK		
Equipment No.:	:		Model No.:	TE-5170	E-5170 Serial No.			
Ambient Condition								
Temperature, Ta (K) 303			Pressure, Pa (mmł	Hg)	759.1			

Orifice Transfer Standard Information						
Serial No.	3746	Slope, mc	0.0592	Intercept, bc	-0.02740	
Last Calibration Date:	17-Jan-20	mc x Qstd + bc = $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$				
Next Calibration Date:	17-Jan-21	Qstd = { $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ -bc} / mc				

		Calibration of	TSP Sampler				
G 11		Orfice	101 Sampler		HVS		
Point	$\Delta H$ (orifice), in. of water	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	[ΔW x (Pa	/760) x (298/Ta)] <sup>1/2</sup> <b>Y-axis</b>	
1	12.9	3.56	60.59	8.5		2.89	
2	9.8	3.10	52.87	6.3		2.49	
3	7.5	2.71	46.31	5.0		2.22	
4	5.2	2.26	38.64	3.2		1.77	
5	2.9	1.69	28.97	1.9		1.37	
Slope , mw = Correlation *If Correlation C	Slope, mw =						
		Set Point C	alculation				
From the TSP Fi	ield Calibration C	urve, take Qstd = 43 CFM					
From the Regres	sion Equation, th	e "Y" value according to					
$mw \ x \ Qstd + bw = [\Delta W \ x \ (Pa/760) \ x \ (298/Ta)]^{1/2}$ Therefore, Set Point; W = ( mw x Qstd + bw ) <sup>2</sup> x ( 760 / Pa ) x ( Ta / 298 ) =4.18							
Remarks:							
Conducted by:	SK Wong	Signature:	<i>.</i>		Date:	9 June 2020	
Checked by: F:\Cinotech Solution	Henry Leung	Signature:	(A-01-54).xls		Date:	9 June 2020	



0023002

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 :SV30A sound calibratorSerial No. /Ref. No. :10965 / N-09-02Object 2 :Serial No. /Ref. No. :			
Customer Code : SVEC09005		Manufacturer : Svar	ntek		
Date of calibration: Date of the recommended re-calibration:	19/12/2019 19/12/2020	Certificate No.: Handle by:	0023002 E0002		

#### Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.9dB	-0.1dB	+/- 0.3dB	1
114.0dB	114.2dB	+0.2dB	+/- 0.3dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability	
1	Master Sound Meter, SVAN949,sn:8571	IEC61672	
2	Sound Calibrator, SV30A sn:32580	IEC60942	

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### **Conformity**

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.

5. The calibrations certificate may not be reproduced.

Measured value(s) within the allowable deviation.	
Performed by	Approved by
Calibration Technician	Quality Manager

Equipment no.: N-12-02



## **Calibration Certificate**

0022522

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 :         BSWA 308 SLM           Serial No. /Ref. No. :         570187 / 550841           Object 2 :		
Customer Code : SVEC09005		Manufacturer : BSWAtech		
Date of calibration: Date of the recommended re-calibration:	23/09/2019 23/09/2020	Certificate No.:         0022522           Handle by:         E0002		

#### Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	113.9dB	-0.1dB	+/- 1.5dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability	
1	Master Sound Meter, SVAN949, sn:8571	IEC61672	
2	Sound Calibrator, SV30A sn:32580	IEC60942	

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.

E The collingations contificate as

5. The calibrations certificate may not be reproduced.	
Measured value(s) within the allowable deviation.	
Performed by	Approved by
Calibration Technician	Quality Manager



0022673

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 :ST-120 sound calibratorSerial No. /Ref. No. :181001608Object 2 :Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : Soundtek
Date of calibration:24/10/2019Date of the recommended re-calibration:24/10/2020	Certificate No.:0022673Handle by:E0002

#### **Measuring results**

	Reference value	Indication value	Deviation	Allowed deviation	Object
	94.0dB	94.0dB	0.0dB	+/- 0.3dB	1
Г	114.0dB	114 1dB	$\pm 0.1$ dB	+/- 0.5dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability	
1	Master Sound Meter, SVAN949, sn:8571	IEC61672	
2	Sound Calibrator, SV30A sn:32580	IEC60942	

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

#### Uncertainty

+/- 0.2dB for probability not less than 95%.

#### Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.

5. The calibrations certificate may not be reproduced.

Measured value(s)	within	the allowable	deviation.
-------------------	--------	---------------	------------

Performed by

Calibration Technician

Approved by

**Quality Manager** 



0022675

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001637 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : Soundtek
Date of calibration:24/10/2019Date of the recommended re-calibration:24/10/2020	Certificate No.: 0022675 Handle by: E0002

#### **Measuring results**

	Reference value	Indication value	Deviation	Allowed deviation	Object
Γ	94.0dB	94.0dB	0.0dB	+/- 0.3dB	1
Г	114.0dB	114.0dB	0.0dB	+/- 0.5dB	1

#### Measuring equipment

index	index Calibrator / Master	
1	Master Sound Meter, SVAN949, sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories

5. The calibrations certificate may not be reproduced.	
Measured value(s) within the allowable deviation.	
Performed by	Approved by
Calibration Technician	Quality Manager



0023001

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 : Serial No. /Ref. No. : Object 2 : Serial No. /Ref. No. :	B&K4231 sound calibrator 2326353 / N-02-01
Customer Code : SVEC09005		Manufacturer : Brue	el & Kjaer
Date of calibration: Date of the recommended re-calibration:	19/12/2019 19/12/2020	Certificate No.: Handle by:	0023001 E0002

#### Measuring results

	Reference value	Indication value	Deviation	Allowed deviation	Object
Γ	94.0dB	94.2dB	+0.2dB	+/- 0.2dB	1
	114.0dB	114.1dB	+0.1dB	+/- 0.2dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### **Conformity**

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.

5. The calibrations certificate may not be reproduced.

Measured value(s) within the allowable deviation.	
Performed by	Approved by
Calibration Technician	Quality Manager



0023157

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 : Serial No. /Ref. No. : Object 2 : Serial No. /Ref. No. :	SVAN959 SLM 11275 / N-08-01 Microphone 22452
Customer Code : SVEC09005		Manufacturer : BSW	VAtech
Date of calibration: Date of the recommended re-calibration:	08/01/2020 08/01/2021	Certificate No.: Handle by:	0023157 E0002

#### Measuring results

	Reference value	Indication value	Deviation	Allowed deviation	Object
Γ	94.0dB	94.2dB	+0.2dB	+/- 1.5dB	1
	114.0dB	113.9dB	-0.1dB	+/- 1.5dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.

5. The calibrations certificate may not be reproduced.

Measured value(s) within the allowable deviation.	
Performed by	Approved by
Calibration Technician	Quality Manager

Appleone Calibration Laboratory Ltd. Rm1309, 13/F, No.77 Wing Hong St, Kln, HKSAR Tel: +852 2370 4437 Fax: +852 2114 0393



**ATTN:** 

WELLAB LIMITED Rms 1214, 1502, 1516, 1701 & 1716, Technology Park, 18 On Lai Street, Shatin, N.T., Hong Kong. Tel: 2898 7388 Fax: 2898 7076 Website: www.wellab.com.hk

1 of 1

#### **TEST REPORT**

#### **APPLICANT: Cinotech Consultants Limited** Test Report No.: 32151 Date of Issue: Room 1710, Technology Park, 2019-09-27 2019-09-26 Date Received: 18 On Lai Street, Shatin, NT, Hong Kong Date Tested: 2019-09-26 Date Completed: 2019-09-27 Next Due Date: 2020-09-26

Mr. Henry Leung

#### **Certificate of Calibration**

#### Item for calibration:

Description Manufacturer Model No. Serial No. Microphone No. Equipment No.

#### **Test conditions:**

Room Temperatre Relative Humidity : 'SVANTEK' Integrating Sound Level Meter : SVANTEK : SVAN 957 : 21455 : 43730 : N-08-07

: 17-22 degree Celsius : 40-70%

Page:

#### **Test Specifications:**

Performance checking at 94 and 114 dB

#### **Methodology:**

In-house method, according to manufacturer instruction manual

#### **Results:**

Reference Set Point, dB	Instrument Readings, dB
94	94.0
114	114.0

PREPARED AND CHECKED BY: For and On Behalf of **WELLAB Ltd.** 

PATRICK TSE Laboratory Manager



0023000

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 : Serial No. /Ref. No. : Object 2 : Serial No. /Ref. No. :	SVAN957 SLM 23852 / N-08-11 Microphone 35989
Customer Code : SVEC09005		Manufacturer : Sva	ntek
Date of calibration: Date of the recommended re-calibration:	19/12/2019 19/12/2020	Certificate No.: Handle by:	0023000 E0002

#### **Measuring results**

F	Reference value	Indication value	Deviation	Allowed deviation	Object
	94.0dB	93.4dB	-0.6dB	+/- 1.5dB	1
	114.0dB	113.4dB	-0.6dB	+/- 1.5dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### Uncertainty

+/- 0.2 dB for probability not less than 95%.

#### Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2. The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

dited this laboratory (HOKLAS 267) fo ALUKACE oifio otivitic a listed in the LIOKLAC d م الله م مألك م

5. The calibrations certificate may not be reproduced.	
Measured value(s) within the allow	vable deviation.
Performed by	Approved by
An	(
Calibration Technician	Quality Manager



0022999

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong		Object 1 : Serial No. /Ref. No. : Object 2 : Serial No. /Ref. No. :	SVAN957 SLM 23851 / N-08-12 Microphone 43676
Customer Code : SVEC09005		Manufacturer : Svar	ntek
Date of calibration: Date of the recommended re-calibration:	19/12/2019 19/12/2020	Certificate No.: Handle by:	0022999 E0002

#### Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	114.0dB	0.0dB	+/- 1.5dB	1

#### Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

#### **Ambient conditions**

Temperature (20...26)°C

Humidity (20...60)%RH

#### Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

#### **Uncertainty**

+/- 0.2 dB for probability not less than 95%.

#### Conformity

1. The resulted values were those obtained at the time of test and applies only to the item calibrated.

2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains

the uncertainty of the measuring procedure and the uncertainty of the measuring system.

3. The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.

4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.

5. The calibrations certificate may not be reproduced.

Measured value(s) within the allowable deviation.	
Performed by	Approved by
Calibration Technician	Quality Manager



RECALIBRATION DUE DATE:

January 17, 2021

Certificate of Calibration

	Calibration Certification Information							
Cal. Date:	Date: January 17, 2020 Rootsmeter S/N: 438320 Ta: 295 °						°K	
Operator:	Jim Tisch	n Tisch			Pa:	744.2	mm Hg	
Calibration Model #: TE-5025A Calibr			brator S/N:	3746			0	
		Vol Init	Val Final	A)/al	ATime	AD	A11	1
	Dup	(m2)	voi. Filidi	Δvoi.	ΔTime (min)			
	1	(115)	(1115)	(115)	(min) 1 /3/0			
	2	3	4	1	1.4340	5.2 6.4	2.00	
	3	5	6	1	0.9080	7.9	5.00	
	4	7	8	- 1	0.8700	8.7	5.50	
	5	9	10	1	0.7150	12.6	8.00	
			[	Data Tabula	tion			
Vstd Ostd $\sqrt{\Delta H \left(\frac{Pa}{Pstr}\right)}$		$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$	)( <u>Tstd</u> )		Qa	$\sqrt{\Delta H(Ta/Pa)}$		
	(m3) (x-axis) (y-axis)		is)	Va	(x-axis)	(y-axis)		
	0.9849	0.6868	1.40	66	0.9957	0.6944	0.8904	
	0.9807	0.9633	1.9892		0.9914	0.9739	1.2592	
	0.9787	1.0779	2.2240		0.9894	1.0896	1.4078	
	0.9776	1.1237	2.332	25	0.9883	1.1360	1.4765	
	0.9724	1.3601	2.813	31	0.9831	1.3749	1.7808	
	OCTO	m=	2.092	21			1.31010	
	QSID	D= r=	-0.02	//9 19/1	QA	b=	-0.01759	
				Colculations				
	Vetda A\/ol/(Do_AD)/Detd)/Tetd/7				ns Vari		2)/D2)	
	Ostd= Vstd/ATime			a <i>)</i>	$Oa=Va/\Lambda Time$			
	For subsequ			uent flow rate calculations:				
<b>Qstd=</b> $1/m \left( \left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right) \right) \right)$			) -b)	$Qa = 1/m \left( \left( \sqrt{\Delta H \left( Ta/Pa \right)} \right) - b \right)$				
	Standard	Conditions	]					
Tstd: 298.15 °K				[	RECALIBRATION			
Pstd: 760 mm Hg					LIS EPA recommends annual recalibration per 1000			
\H· calibrat	or manomet	er reading (in	n H2O)		40 Code of Federal Regulations Part 50 to 51			
AP: rootsme	ter manome	eter reading (	(mm Hg)		Annendix B to Part 50 Reference Method for the			
Fa: actual al	osolute tem	perature (°K)			Determination of Suspended Particulate Matter in			
Pa: actual barometric pressure (mm Hg)			Hg)		the the	Atmosph	ra 0.217 name	e iviatter fr
b: intercept					une cine	Annosphe	ie, 3.2.17, page :	50
n: slope								

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002

<u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9009

#### **Cerificate of Calibration - Wind Monitoring Station**

Description:	Yau Lai Estate, Bik Lai House
Manufacturer:	Davis Instruments
Model No.:	<u>Davis7440</u>
Serial No.:	<u>MC01010A44</u>
Equipment No.:	<u>SA-03-04</u>
Date of Calibration	<u>21-Feb-2020</u>
Next Due Date	<u>21-Aug-2020</u>
Model No.: Serial No.: Equipment No.: Date of Calibration Next Due Date	Davis fist unerts           Davis 7440           MC01010A44           SA-03-04           21-Feb-2020           21-Aug-2020

#### 1. Performance check of Wind Speed

Wind S <sub>I</sub>	peed, m/s	Difference D (m/s)		
Wind Speed Reading (V1)	Anemometer Value (V1)	D = V1 - V2		
0.0	0.0	0.0		
1.2	1.3	-0.1		
2.0	2.1	-0.1		
3.0	3.2	-0.2		

#### 2. Performance check of Wind Direction

Wind Di	rection (°)	Difference D (°)		
Wind Direction Reading (V1)	Marine Compass Value (V1)	$\mathbf{D} = \mathbf{W1} - \mathbf{W2}$		
0	0	0.0		
90	90	0.0		
180	180	0.0		
270	270	0.0		

**Test Specification:** 

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer

2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by: \_\_\_\_\_\_\_ Approved by: \_\_\_\_\_\_\_\_ Lemy Leung



#### MSA Hong Kong Ltd.

25/F Jupiter Tower, 9 Jupiter Street, Hong Kong Tel 852-22587588 Fax 25478780 Email info.hk@msasafety.com Website www.msasafety.com

Date: 22-May-20

## Ref.2020/05/008CustomerLeighton China State Joint Venture

#### CERTIFICATE FOR CALIBRATION CHECK TEST

Model	Serial No.	<b>Calibration Check Gas</b>	Regulator	Full Scale	Response
	152097	1.45% Methane,	.251itre/min	100% LEL	29%LEL
		15% Oxygen		30% Vol	15% O2
Altoin 5V		60ppm Carbon Monoxide		1999 ppm	60ppm CO
Anali 5A		20ppm Hydrogen Sulfide		200 ppm	20ppm H2S
		2.5% Carbon Dioxide	d	10% Vol	2.5% CO2
		25ppm Ammonia	Demand	100 ppm	25ppm NH3

#### Remarks: Regular inspection completed. Calibration passed

MSA Hong Kong Ltd. certify that instrument/s listed above has/have been calibrated check tested on: 22-May-20

This instrument was calibrated in accordance with all requirements of the specifications of MSA.

This instrument must be calibration checked prior to use in accordance with the instruction manual.

This instrument was calibrated using NIST traceable equipment and was in accordance with all requirements of the drawings and specifications of MSA.

For and on behalf of MSA Hong Kong Ltd.

Authorised Signature